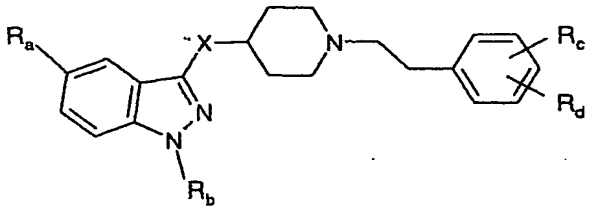
CLAIMS

1. A compound of formula:



(I)

where

X is $C(O)NHCH_2$, $NHC(O)$ or $NHC(O)CH_2$;

R_a is H, $NH_2C(O)$, $CH_3C(O)NH$, CH_3SO_2, CH_3SO_2NH, linear or branched C_1-C_3 alkyl, linear or branched C_1-C_3 alkoxy, or halogen;

R_b is H, linear or branched C_1-C_6 alkyl; aryl-(C_1-C_3)alkyl optionally substituted with 1 or 2 halogen atoms, with a C_1-C_3 alkyl group or a C_1-C_3 alkoxy group;

and in which

a) when X is $C(O)NHCH_2$

R_c is hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkyl-ammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R" are H, or a linear or branched C_1-C_6 alkyl ,

R_d is H, hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R" have the meanings stated above,

with the proviso, however, that when R_a and R_d are both H, and R_b is isopropyl, then R_c is not hydroxy;

b) when X is $NHC(O)$ or $NHC(O)CH_2$

R_c and R_d, which may be equal or different, are H, hydroxy, C_1-C_3 alkoxy, halogen, amino, di-(C_1-C_3)alkylamino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, R'R"NSO_2, where R' and R" have the meanings stated above,

and their acid addition salts with pharmaceutically acceptable organic and inorganic acids.

2. A compound according to claim 1, characterized in that R_a is H or C_1-C_3 alkyl.

3. A compound according to claim 1 or 2, characterized in that R_b is H or C_1-C_3 alkyl.

4. A compound according to any one of the claims 1 to 3, characterized in that R_c is H, NO_2, NH_2, OH or C_1-C_3 alkoxy.

5. A compound according to any one of the claims 1 to 4, characterized in that R_d is H.

6. An acid addition salt of a compound according to any one of the claims 1 to 5, characterized in that the acid is selected from the group comprising oxalic, maleic, methanesulphonic, paratoluenesulphonic, succinic, citric, tartaric, lactic, hydrochloric, phosphoric and sulphuric acid.

7. N((1-(2-(4-nitrophenyl)ethyl)-4-piperidinyl)methyl)-1H-indazole-3-carboxamide and the pharmaceutically acceptable acid addition salts thereof.

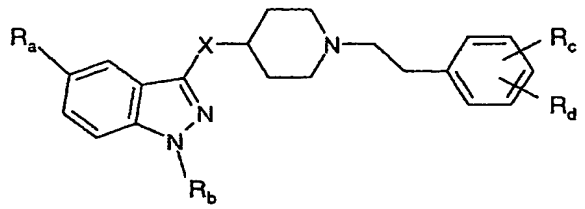
8. N((1-(2-(4-nitrophenyl)ethyl)-4-piperidinyl)methyl)-1H-indazole-3-carboxamide hydrochloride.

9. N((1-(2-(4-aminophenyl)ethyl)-4-piperidinyl)methyl)-1H-indazole-3-carboxamide and the pharmaceutically acceptable acid addition salts thereof.

10. N((1-(2-(4-aminophenyl)ethyl)-4-piperidinyl)methyl)-1H-indazole-3-carboxamide dihydrochloride.

11. N((1-(2-(4-nitrophenyl)ethyl)-4-piperidinyl)methyl)-1-(1-methylethyl)-1H-indazole-3-carboxamide and the pharmaceutically acceptable acid addition salts thereof.
12. N((1-(2-(4-nitrophenyl)ethyl)-4-piperidinyl)methyl)-1-(1-methylethyl)-1H-indazole-3-carboxamide oxalate.
13. N((1-(2-(4-aminophenyl)ethyl)-4-piperidinyl)methyl)-1-(1-methylethyl)-1H-indazole-3-carboxamide and the pharmaceutically acceptable acid addition salts thereof.
14. N((1-(2-(4-aminophenyl)ethyl)-4-piperidinyl)methyl)-1-(1-methylethyl)-1H-indazole-3-carboxamide dihydrochloride.
15. N-(1-methyl-1H-indazol-3-yl)-1-(2-phenylethyl)piperidine-4-carboxamide and the pharmaceutically acceptable acid addition salts thereof.
16. N-(1-methyl-1H-indazol-3-yl)-1-(2-phenylethyl)piperidine-4-carboxamide hydrochloride.
17. N-(1-methyl-1H-indazol-3-yl)-1-(2-(4-methoxyphenyl)ethyl)piperidine-4-carboxamide and the pharmaceutically acceptable acid addition salts thereof.
18. N-(1-methyl-1H-indazol-3-yl)-1-(2-(4-methoxyphenyl)ethyl)piperidine-4-carboxamide hydrochloride.
19. N-(1-methyl-1H-indazol-3-yl)-1-(2-(4-hydroxyphenyl)ethyl)piperidine-4-carboxamide and the pharmaceutically acceptable acid addition salts thereof.
20. N-(1-methyl-1H-indazol-3-yl)-1-(2-(4-hydroxyphenyl)ethyl)piperidine-4-carboxamide hydrochloride.
21. N((1-(2-(4-hydroxyphenyl)ethyl)-4-piperidinyl)methyl)-5-methyl-1-(1-methylethyl)-1H-indazole-3-carboxamide and the pharmaceutically acceptable acid addition salts thereof.
22. N((1-(2-(4-hydroxyphenyl)ethyl)-4-piperidinyl)methyl)-5-methyl-1-(1-methylethyl)-1H-indazole-3-carboxamide hydrochloride.

23. A method for preparing a compound of formula (I)



(I)

and its acid addition salts with pharmaceutically acceptable organic or inorganic acids,

where

X is $C(O)NHCH_2$;

R_a is H, $NH_2C(O)$, $CH_3C(O)NH$, CH_3SO_2, CH_3SO_2NH, linear or branched C_1-C_3 alkyl, linear or branched C_1-C_3 alkoxy, or halogen;

R_b is H, linear or branched C_1-C_6 alkyl; aryl-(C_1-C_3)alkyl optionally substituted with 1 or 2 halogen atoms, with a C_1-C_3 alkyl group or a C_1-C_3 alkoxy group;

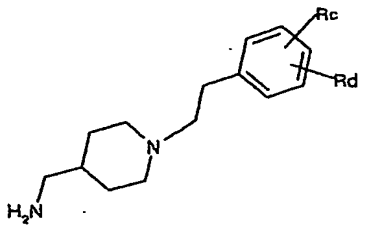
R_c is hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, R'R"NSO_2, where R' and R" are H, or a linear or branched C_1-C_6 alkyl ,

R_d is H, hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, R'R"NSO_2, where R' and R" have the meanings stated above,

with the proviso, however, that when R_a and R_d are both H, and R_b is isopropyl, then R_c is not hydroxy;

characterized in that it comprises the following stages:

a) reaction of an amine of formula (II)

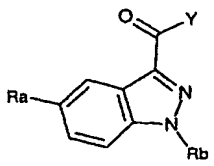


(II)

where

R_c and R_d have the same meanings as stated above or, when R_c or R_d is an amino or alcoholic group, R_c and R_d may be an amino or alcoholic group protected by a conventional protective group,

with a derivative of an indazole-carboxylic acid of formula (IIIa)



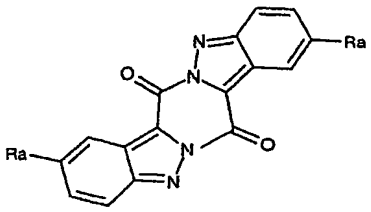
(IIIa)

where

R_a and R_b have the meanings stated above, and

Y is a Cl or Br atom, or a group OR or OC(O)R, where R is a linear or branched alkyl having 1 to 6 carbon atoms,

or with a derivative of an indazole-carboxylic acid of formula (IIIb)



(IIIb)

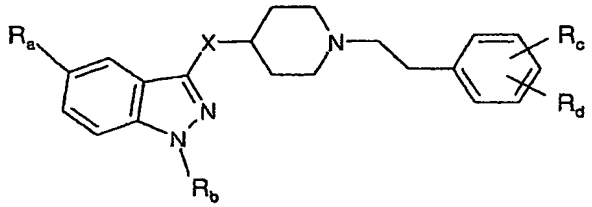
where

R_a has the meanings stated above,

b) cleavage of any possible protective group of the aforesaid amino or alcoholic group, and

c) optional formation of an acid addition salt of the indazolamide of formula (I) with a pharmaceutically acceptable organic or inorganic acid.

24. A method of preparation a compound of formula (I)



(I)

and the pharmaceutically acceptable acid addition salts thereofwith organic or inorganic acids,

where

X is NHC(O) or $NHC(O)CH_2$;

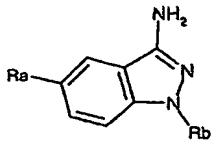
R_a is H, $NH_2C(O)$, $CH_3C(O)NH$, CH_3SO_2, CH_3SO_2NH, linear or branched C_1-C_3 alkyl, linear or branched C_1-C_3 alkoxy, or halogen;

R_b is H, linear or branched C_1-C_6 alkyl; aryl-(C_1-C_3)alkyl optionally substituted with 1 or 2 halogen atoms, with a C_1-C_3 alkyl group or a C_1-C_3 alkoxy group;

R_c and R_d, which may be equal or different, are H, hydroxy, C_1-C_3 alkoxy, halogen, amino, di-(C_1-C_3)alkylamino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R" are H, or linear or branched C_1-C_6 alkyl,

characterized in that it comprises the following stages:

a') reaction of an amine of formula (IV)

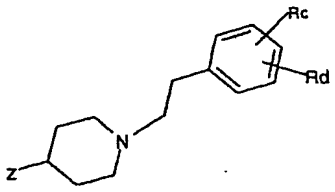


(IV)

where

R_a and R_b have the meanings stated above,

is condensed with a derivative of a carboxylic acid of formula (V)



(V)

where

R_c and R_d have the same meanings as stated above or, when R_c or R_d is an amino or alcoholic group, R_c and R_d may be an amino or alcoholic group protected by a protective group of conventional type, and

Z is a group C(O)Y or $CH_2C(O)Y$ in which Y is a Cl or Br atom, or an OR or OC(O)R group, where R is a linear or branched alkyl having from 1 to 6 carbon atoms,

b') cleavage of any possible protective group of the aforesaid amino or alcoholic group, and

c') optional formation of a salt of acid addition of the indazolamide of formula (I) with a pharmaceutically acceptable organic or inorganic acid.

25. A method according to claim 23, characterized in that stage (a) is carried out by reacting a compound of formula (II) with a

compound of formula (IIIa) in which Y is chlorine, or with a compound of formula (IIIb) in the presence of a suitable diluent and at a temperature of from 0 to 140ºC for a time of from 0.5 to 20 hours.

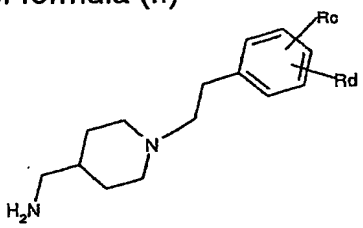
26. A method according to claim 24, characterized in that stage (a') is carried out by reacting a compound of formula (IV) with a compound of formula (V) in which Y is chlorine in the presence of a suitable diluent and at a temperature of from 0 to 140ºC for a time of from 0.5 to 20 hours.

27. A method according to claim 25 or 26, characterized in that the reaction temperature is of from 15 to 40ºC.

28. A method according to claim 25 or 26, characterized in that the reaction time is of from 1 to 18 hours.

29. A method according to any one of the claims from 25 to 28, characterized in that the diluent is an aprotic diluent selected from the group comprising toluene, dimethylformamide and dimethylsulphoxide.

30. An intermediate of formula (II)



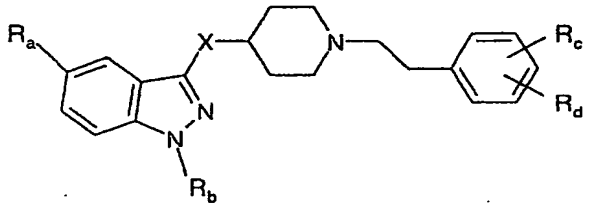
(II)

where

R_c is hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkyl-ammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, R'R"NSO_2, where R' and R" are H, or linear or branched C_1-C_6 alkyl,

R_d is H, hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R" have the meanings stated above.

31. A pharmaceutical composition containing an effective amount of a compound of formula (I):



(I)

where

X is $C(O)NHCH_2$, $NHC(O)$ or $NHC(O)CH_2$;

R_a is H, $NH_2C(O)$, $CH_3C(O)NH$, CH_3SO_2, CH_3SO_2NH, linear or branched C_1-C_3 alkyl, linear or branched C_1-C_3 alkoxy, or halogen;

R_b is H, linear or branched C_1-C_6 alkyl; aryl-(C_1-C_3)alkyl optionally substituted with 1 or 2 halogen atoms, with a C_1-C_3 alkyl group or a C_1-C_3 alkoxy group;

and in which

a) when X is $C(O)NHCH_2$

R_c is hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R" are H, or a linear or branched C_1-C_6 alkyl ,

R_d is H, hydroxy, amino, di-(C_1-C_3)alkyl-amino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R" have the meanings stated above,

with the proviso, however, that when R_a and R_d are both H, and R_b is isopropyl, then R_c is not hydroxy;

b) when X is NHC(O) or $NHC(O)CH_2$

R_c and R_d, which may be equal or different, are H, hydroxy, C_1-C_3 alkoxy, halogen, amino, di-(C_1-C_3)alkylamino, tri-(C_1-C_3)alkylammoniomethyl, nitro, trifluoromethyl, nitrile, $CH_3C(O)NH$, CH_3SO_2NH, CH_3SO_2, $R'R''NSO_2$, where R' and R'' have the meanings stated above,

or of a pharmaceutically acceptable addition salt thereof with an organic or inorganic acid, and

at least one pharmaceutically acceptable inert ingredient.

32. A pharmaceutical composition according to claim 31, characterized in that it contains a compound according to any one of the preceding claims from 2 to 22.